



TDD Capital Improvement Program Presentation

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Benefits of Pavement Preservation Program

- Pavement maintained at higher level
- Significant cost savings
- Entire neighborhoods treated at same time
- Establishment of maintenance sequence
- More predictable budget
- Extends pavement life



Purpose of PMS

- All streets deteriorate over time and require maintenance
- Timing and type of maintenance selected is affected by many variables:
 - Condition of street
 - Type of traffic
 - Pavement composition
 - Drainage issues
- PMS tracks and quantifies these variables
- PMS primarily used as planning and budgeting tool



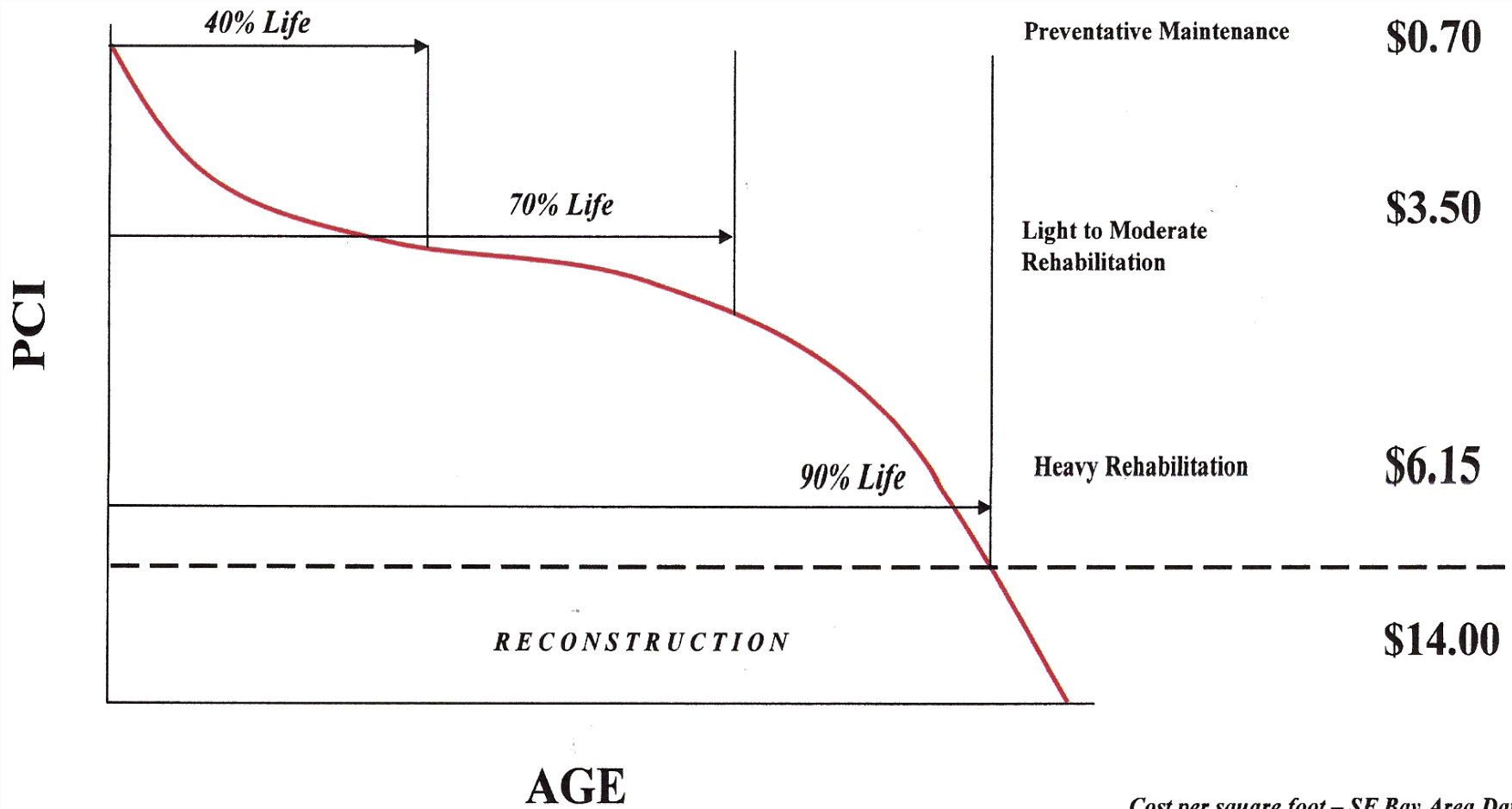
St. Ann's Overall PCI History

<u>Year</u>	<u>Inspected PCI</u>	<u>"Do Nothing" PCI</u>
2008	57.8	57.8
2009	57.8	55.7
2010	54.4	53.6
2011	59.8	51.5
2012	59.1	49.1
2013	57.1	47.3
2014	57.1	45.2
2015	61.1	43.1
2016	60.3	41.0

*Please note that St. Ann's current PCI deterioration rate is 2.1 pts./yr. (50 yr. service life)
and that MicroPAVER's default deterioration rate is 3.0 pts/yr. (33 yr. service life)*



Pavement Deterioration Curve



Cost per square foot – SF Bay Area Data



Pavement Distresses

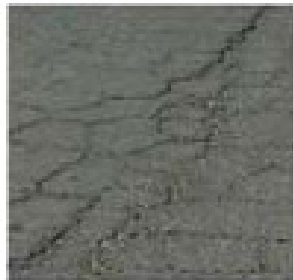
Common Pavement Distresses

Alligator cracking Edge cracking Potholes Rutting	Patching and utility cuts Joint spalls Cracked slab Corner break
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0-30
Very Poor



31-55
Poor



56-70
Fair



71-85
Good



86-100
Very Good





Features of Micro PAVER software

- Pavement Distresses measured by lineal foot or square foot
- Rated as Low, Medium or High severity as defined by Micro PAVER criteria
- Multiple distresses are adjusted by software to properly rate pavement condition
- Asphalt sample unit is 100 ft. long
- Concrete sample unit is 20 slabs
- The same sample units are inspected each year
- Inspection data is entered into software to calculate PCI



Features of Micro PAVER software

- MicroPAVER is a network level analysis for all streets
- Once a candidate street is considered for maintenance a project level analysis must occur to identify the scope of work for that particular street
- Factors that may affect project scope include:
 1. Amount of curb & gutter needing to be replaced
 2. Amount of base repair needed
 3. Extent of low or sunken areas in pavement or driveways
 4. Utility relocation or replacement needed or planned
 5. Coring data affects maintenance options



Annual Pavement Inspections

- Inspections are typically performed each fall and/or winter at conclusion of construction season
- All reconstruction as well as major maintenance and repair are entered in to Micro PAVER database resetting PCI to 100
- Each street is evaluated annually providing a “snap shot” of how effective various maintenance techniques are performing (or not)
- Streets typically follow a predictable decline however, there are exceptions and annual inspections identify these quickly



Pavement Maintenance Toolbox

- Crack Sealing \$0.50/LF
- Spot asphalt repair \$2.00/SY
- Slab replacement \$70/SY
- Slurry Seal \$3.50/SY
- Chip Seal \$4.50/SY
- Microsurfacing \$5.00/SY
- Novachip \$9.00/SY
- Asphalt mill & overlay \$30.00/SY
- Heavy asphalt mill & overlay \$45.00/SY
- Reconstruction \$100.00/SY



How are streets selected for the CIP?

There are many factors that go into the selection of streets for inclusion in the Capital Improvement Program (CIP), such as:

- PCI (*the starting point*)
- Coring data
- Deterioration rate of a particular street
- Traffic volume and street use characteristics
- Drainage issues
- Substandard pavement section



How are streets selected for the CIP? (cont.)

- Neighborhood layout and/or Street geometry
- Types and extent of pavement distresses
- Quantity of curb & gutter replacement (St. Joachim - from Baltimore to Breckenridge)
- Pavement composition (concrete, asphalt or asphalt overlaid concrete?)
- Anticipated future work or other related projects
- Available budget (Federal \$ available?)



Impact of Deterioration Rate

Street Name	From	To	Section #	Length	Width	Area (SF)	2008 PCI	2009 PCI	2010 PCI	2011 PCI	2012 PCI	2013 PCI	2014 PCI	2015 PCI	2016 PCI	Deterioration Rate/Year
June Dr.	Geraldine	Jane	001	341	26	8,866	62	55	48	37	34	23	21	21	21	5.1
Fairway Ct.	Stephens Place	Cul de sac	001	700	27	18,900	49	40	29	23	27	15	14	13	12	4.6
St. Gregory Ln.	Wright	Westridge	004	245	28	6,860	52	50	37	30	24	23	21	20	19	4.1
St. Katherine Ln.	Wright	St. Joachim	001	465	26	12,090	55	53	41	43	40	39	37	34	22	4.1
St. Leonard Ln.	St. Shawn	St. Mattius	001	386	26	10,036	44	32	30	29	30	20	18	15	15	3.6
St. Sebastian Ln.	St. Matthew	St. Xavier	001	340	26	8,840	41	41	44	37	44	38	24	18	12	3.6
Mert Rd.	Ashby	Lansing	001	2210	27	59,670	50	38	33	34	34	27	27	27	27	3.4
St. Cecelia Ln.	St. Clement	St. Damian	001	585	26	15,210	38	21	17	14	20	9	9	9	11	3.4
St. Dominic Ln.	St. Damian	Cul de sac	001	545	26	14,170	55	45	43	44	42	29	29	28	28	3.4
Farview Estates	Farview	Cul de sac	001	530	30	15,900	72	61	70	68	70	61	56	50	43	2.8
Dixie Dr.	Kingbee	Dead End	001	2985	27	80,595	50	43	41	41	41	41	37	33	29	2.6
St. Joachim Ln.	St. Charles Rock Rd.	St. Katherine	001	2770	28	77,560	40	48	38	35	30	23	22	21	21	2.4
St. Katherine Ln.	St. Joachim	St. Williams	001	790	27	21,330	51	44	42	41	39	34	33	32	32	2.4
Ashby Rd.	Dead End @ I-70	bridge at golf course	002	2700	36	97,200	47	36	32	36	41	30	29	29	29	2.3
St. Matthus Ln.	St. Leonard	St. Linus	001	405	26	10,530	36	24	20	30	30	33	28	23	19	2.1
Lee Ave.	Adie	Long	001	945	28	26,460	26	11	14	14	18	7	7	7	9	1.9
Jane Ave.	Geraldine	N. ROW line of June	001	1426	26	37,076	20	19	14	11	10	9	8	7	7	1.6
Wright Ave.	N ROW line Wright	S. line of Douglass	002	7213	27	198,104	43	44	42	39	37	35	34	33	32	1.4
Ashby Rd.	Baltimore	City Limits south	002	765	63	48,195	89	89	88	88	86	83	81	81	81	1.0
High Dr.	Kingbee	Dead End	001	2900	27	78,300	43	43	41	40	43	40	38	38	38	0.6
Wright Ave.	St. Charles Rock Rd.	City Park (Schaefer)	003	2500	27	67,500	47	47	47	47	48	47	45	44	44	0.4
Isabelle Ct.	Wright	Executive	001	370	26	9,620	28	28	27	29	30	30	30	30	30	0.0
St. Gregory Ln.	St. Charles Rock Rd. south to	Wright	001	1955	28	54,740	29	33	30	30	30	25	28	28	28	0.0



2017 Novachip (revised streets)

Novachip streets as bid:

Name	2016 PCI	Year last Microsurfaced
Orchard	69	2011
Theresa	68	2009
La Vista Ct.	64	2011
Ashby Place Ct.	73	2011
Little Flower Ct.	69	2011

Recommended changes to Novachip list:

Lynros Ct.	63	2010
Lynros Dr.	64	2010
Theresa	68	2009
St. Genevieve	56	2011
Shamrock (St. Joachim to St. Christopher)	67	2010



2017 CIP

Novachip

Lynros Ct.
Mercer Ct.
Theresa

Lynros Dr.
St. Genevieve
Shamrock (St. Joachim to St. Christopher)

13,100 SY @ \$9.50/SY	\$125,000
Curb & gutter replacement	<u>\$75,000</u>
Total	\$200,000
SAY	\$200,000

Major M & R

Curb & gutter replacement

Ashby Rd (International Plaza to Ashby Bridge) \$40,000

Ashby Novachip (FEDERALLY FUNDED)

Engineering (1/2 of total ESC invoiced in 2017)	\$60,500	
City Share	\$12,100	\$12,100
Federal Share	\$48,400	
Right-of-Way Acquisition	\$75,000	
City Share	\$15,000	\$15,000
Federal Share	\$60,000	



2017 CIP (cont.)

Park Bond Issue

Vatterott Fields (Mill and overlay, curb stops & striping)	\$40,000
St. Ann Park (M & O Parking Lot, curb stops & striping, R&R curbing and seal coat walking paths)	\$175,000
Mary Ridge Park (Overlay Parking Lot, curb stops, R & R curbing and striping)	\$15,000
Schaefer Park (Overlay Parking Lot, curb stops, striping, R&R curbing)	\$30,000
Buder Park (Selective repair of concrete paths)	\$1,500
Contingency @ 10%	\$26,100
Administrative Costs	<u>\$45,000</u>
Park Subtotal	\$332,600
Streets Subtotal	<u>\$267,100</u>
	\$599,700
TOTAL 2017	\$600,000



2018 CIP

Novachip

St. Daniel	St. Arsene	St. Myron
St. Nathan	Easy St.	Easy Ct.
Florence	St. Regina	St. Raphael
Orchard	El Gasser	St. Ann
Shamrock (St. Gregory to St. Joachim)		St. Luke

30,000 SY @ \$9.75/SY	\$292,500
Curb & gutter replacement	<u>\$40,000</u>
	\$332,500
SAY	\$340,000

Major M & R

Reconstruction (subject to passage of TDD)

Jane Ave.	\$400,000
June Dr. (Jane to Geraldine)	\$75,000

Ashby Novachip (FEDERALLY FUNDED)

Mill & Overlay construction	<i>\$1,050,000</i>	
City Share	\$210,000	\$210,000
Federal Share	\$840,000	



2018 CIP (cont.)

Major M & R

Old St. Charles (FEDERALLY FUNDED)

Engineering design

\$51,500

City Share	\$10,300	\$10,300
Federal Share	\$41,200	
		Street Subtotal \$1,025,000
		SAY \$1,000,000

Park Bond Issue

Tiemeyer Park

Community Center Parking Lot

(Novachip, new AC curbs, new PCC curb stops, striping)

\$130,000

West Parking Lot

(Novachip, new AC curbs, striping)

\$60,000

Northwest Parking Lot

(Novachip parking stalls, new AC curb, M&O Parking Lot,
new PCC curb stops, striping)

\$75,000



2018 CIP (cont.)

Tiemeyer Park (continued)

Northeast Parking Lot

(Novachip, New AC curbs, striping) \$25,000

East Parking Lot (by pavilions)

(Novachip, new PCC curbing, striping) \$140,000

Middle Parking Lot (by softball fields)

(Novachip, new PCC curbing, striping) \$25,000

South Drive (Novachip, new AC curb, striping) \$175,000

North Drive (2 inch M&O, new AC curb) \$125,000

Walking Trails (Sealmaster) \$30,000

New sidewalk from Cavan Dr. to Pavilion Area \$10,000

Contingency @ 10% \$81,500

Administrative costs \$85,000

Park Subtotal \$961,500

SAY \$1,000,000



2018 CIP (cont.)

Police Department

Rear Parking Lot Reconstruction \$550,000

Streets Subtotal	\$1,000,000
Park Subtotal	\$1,000,000
Police Parking Lot Subtotal	<u>\$550,000</u>
Total	\$2,550,000

TOTAL 2018 SAY \$2,600,000



2019 CIP

Novachip

San Carlos	Lansing	La Vista Ct.
St. Robert	La Vista Dr.	Orchard
Theresa	St. Christopher	St. Arthur (St. Joan to San Jose)
St. Henry Ln. (San Jose to Ashby)	Little Flower Ct.	

30,900 SY @ \$10.00/SY	\$309,000
Curb & gutter replacement	<u>\$40,000</u>
Total	\$349,000

SAY \$350,000

Major M & R

Reconstruction (subject to passage of TDD)

Fairway Ct.	\$175,000
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Mill and Overlay (subject to passage of TDD)

St. Joachim (Rock Rd to St. Katherine)	\$400,000
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Old St. Charles (FEDERALLY FUNDED)

Construction

	\$370,275	
City Share	\$74,055	\$74,055
Federal Share	\$296,220	
Streets Subtotal		<u>\$999,055</u>

TOTAL 2019 \$1,000,000



2020 CIP

Novachip

Lucille
 St. Xavier
 Ridgecrest
 Krem Ct.
 St. Dismas

June (Geraldine to Esseldale)
 St. Monica
 Wendy
 Krem Dr.

Stephens Place (Wright to Sims)
 Cavan
 Gertrude
 St. Veronica

30,640 SY @ \$10.25/SY	\$314,060
Curb & gutter replacement	<u>\$40,000</u>
	\$354,000
SAY	\$360,000

Major M & R

Mill & Overlay (subject to passage of TDD)

St. Dominic
 St. Clement

	\$60,000
	<u>\$45,000</u>
	\$105,000
SAY	\$115,000



2020 CIP (cont.)

Reconstruction *(subject to passage of TDD)*

St. Leonard	\$87,000
St. Mattius	\$88,000
St. Linus	\$89,000
St. Joachim (Breckenridge to Baltimore)	<u>\$250,000</u>
	\$514,000
	SAY \$525,000
Street Subtotal	\$1,000,000
TOTAL 2020	\$1,000,000



Budget Reminder

Please note that the BOA should consider the FY 2021- 2027 CIP budgets to be tentative and subject to change due to pavement conditions and budget constraints.



2021 CIP *(subject to passage of TDD)*

Novachip

Ashby Place Ct.
 Boylston Hill Ct.
 St. Frances Ct.
 St. Sebastian (St. Xavier to St. Edmund)
 St. Francis Ln. (Adie to cul de sac)

Colin Ct.
 Georgetown Farm Ct.
 St. Henry Ct.
 St. Michael

St. Mark
 St. Augustine Ct.
 Boylston Hill
 St. Michael Terrace

31,775 SY @ \$10.50/SY	\$336,637
Curb & gutter replacement	<u>\$45,000</u>
	\$381,637
SAY	\$400,000

Major M & R

Mill & Overlay (subject to passage of TDD)

St. Cecelia	\$125,000
St. Gregory Ln (Rock Rd to Wright)	\$180,000
St. Damian	\$90,000
St. Lawrence	<u>\$85,000</u>
	\$480,000

Reconstruction (subject to passage of TDD)

St. Shawn	<u>\$125,000</u>
Major M & R Subtotal	\$605,000

TOTAL 2021 \$1,005,000



2022 CIP (subject to passage of TDD)

Novachip

Esseldale
Quebec
St. Agnes
Eastridge

Sims
Modesto
Caucer
St. Nicholas

Carlow Place
Killdare
Westridge

30,410 SY @ \$10.75/SY	\$326,907
Curb and gutter replacement	\$40,000
	\$366,907
SAY	\$375,000

Major M & R

Mill & Overlay (subject to passage of TDD)

Ashby Rd. (Ashby Bridge to dead end at I-70)	\$300,000
St. Sebastian (St. Matthew to St. Xavier)	\$25,000
Mert	\$175,000
St. Joan (St. Henry to San Jose)	\$100,000
	\$600,000

Reconstruction (subject to passage of TDD)

St. Ambrose (Ashby to St. Ann Park)	\$35,000
Major M & R Subtotal	\$635,000

TOTAL 2022 \$1,010,000



2023 CIP *(subject to passage of TDD)*

Novachip

Constance
St. Martha
Pearl Harbor
St. Edmund Ct.

St. Martin
St. Kevin
Bernice
St. Edmund Ln.

Tropic
Ronald
St. Kevin Park
St. Cosmos

31,275 SY @ \$11.00/SY	\$344,025
Curb and gutter replacement	\$45,000
	\$389,025
SAY	\$400,000

Major M & R

Mill & Overlay (subject to passage of TDD)

St. Henry (Ashby to Holy Trinity)
St. Anthony
St. Timothy

\$225,000
\$70,000
\$55,000
\$350,000

Reconstruction (subject to passage of TDD)

Isabelle Ct. (Wright to dead end)
St. Gregory (Wright to Westridge)

\$160,000
\$75,000

Major M & R Subtotal \$585,000

TOTAL 2023 \$985,000



2024 CIP *(subject to passage of TDD)*

Novachip

St. Jude
 St. Matthew (Ashby to San Jose)
 St. Bernard
 St. Henry (Adie to 1135 ft. east)
 St. Leo

St. Donald
 St. Helen
 Ivan
 Jeremiah
 St. Pius

St. Clovis
 St. Delores
 Crestshire
 Abdo

30,950 SY @ \$11.25/SY	\$348,187
Curb and gutter replacement	<u>\$50,000</u>
Total	\$398,187
SAY	\$400,000

Major M & R

Mill and Overlay (subject to passage of TDD)

Kingbee Place \$140,000

2 inch asphalt overlay (subject to passage of TDD)

Farview Estates \$40,000

Selective slab repair (subject to passage of TDD)

Oakpointe \$75,000

Reconstruction (subject to passage of TDD)

Lee \$350,000

Major M & R Subtotal \$605,000

TOTAL 2024 \$1,005,000



2025 CIP *(subject to passage of TDD)*

Novachip

Parc Chalet
Long

St. Francis (Adie to 1135 ft. east)
International Plaza

27,575 SY @ \$11.50/SY	\$317,112
Curb and gutter replacement	<u>\$35,000</u>
Total	\$352,112
SAY	\$360,000

Major M & R

Mill and Overlay (subject to passage of TDD)

St. Boniface	\$100,000
St. Philip	\$225,000
St. Williams	\$100,000
Lorraine	\$40,000
St. Barbara	<u>\$55,500</u>

Major M & R Subtotal	\$520,500
TOTAL	\$880,500
SAY	\$900,000

TOTAL 2025 \$900,000

Note: \$100,000 will be transferred from FY 2025 funds to FY 2026



2026 CIP (subject to passage of TDD)

Major M & R

Mill and Overlay (subject to passage of TDD)

Dixie	\$450,000
Livingston	\$150,000
High	\$375,000
Stephens Place (Wright to Fairway Ct.)	\$50,000
St. Girard	\$55,000
St. Jerome	<u>\$55,000</u>

Major M & R Subtotal \$1,135,000

TOTAL 2026 \$1,135,000

Note: \$100,000 budget transfer from FY 2025 to FY 2026



2027 CIP *(subject to passage of TDD)*

Novachip

Baltimore
Breckenridge

14,560 SY @ \$12.00/SY	\$168,000
Curb and gutter replacement	<u>\$20,000</u>
	\$188,000
SAY	\$200,000

Major M & R

Mill and Overlay (subject to passage of TDD)

St. Katherine (St. Joachim to St. Williams)	\$100,000
St. Katherine (St. Williams to Ashby)	\$300,000
St. Stephen Ln.	\$175,000

Reconstruction (subject to passage of TDD)

Janice Ct.	\$45,000
Foxhall Ct.	<u>\$150,000</u>

Major M & R Subtotal \$770,000

TOTAL \$970,000

TOTAL 2027 \$1,000,000



Questions?